

Lab Problem 1

In modern automobiles, a crash prevention safety feature is the airbag. Contrary to what most people believe, which is that the gas comes from a compressed air tank, these airbags are filled by rapid decomposition of sodium azide to produce nitrogen gas. In this problem, you will be *simulating* this process by using another chemical reaction and a Ziploc bag.

Your task is to use baking soda and 0.50 *M* HCl to generate a gas that will help to *just fill* a small zip-type plastic bag. The ideal result will be to fill the bag to plumpness, not to over/under-inflate the bag.

In your lab notebook:

- Make sure you provide a detailed explanation of your procedure (a list will suffice)
- Show all your calculations as well as the reactions.

Notes:

- You will only be given TWO bags to make this work. So make sure to double check your math.
- You will be assessed on plumpness of bag and as well as your procedure/calculations.

Question (to be answered in lab notebook)

Give three reasons why you only want to calculate the airbag volume to plumpness.